MURVAY, Arpad (Budapest); STERBETZ, Istvan (Budapest)

Population fluctuations in the avifauna of Saser reservation.
Allattani kozl 51 no.1/4:77-81 '64.

MURRAY, Amad

Meeting of [illegible]

MUR'YANOV, N.

Large scale repair of houses is carried out according to schedule. Zhil.-kom.khoz. 4 no.6:6-8 '54. (MLRA 7:10)

1. Glavnyy inzhener Pavlovskoy stroykontory.
(Building--Repair and reconstruction)

MURYAYEV, E.; FILIPPOVA, N., redaktor; BODROV, A., tekhnicheskiy redaktor.

[Unbeaten paths; notes of a geographer] Neprotorennymi putiami; zapiski geografa. Izd. 3-e, dop. [Moskva] Izd-vo TsK VLKSM "Molodaia gvardiia," 1954. 390 p. [Microfilm] (MLRA 7:10)
(Soviet Central Asia--Description and travel) (Mongolia--description and travel)

MURYCHEV, Leonard Veniaminovich; POSDNYSHEV, A.V., redaktor; ANDRIANOV, B.I., tekhnicheskiy redaktor.

[Flying models of helicopters] Letaiushchie modeli vertoletov. Moskva, Izd-vo DOSAAF, 1955. 65 p. (MLRA 9:5)
(Helicopters--Models)

MURYGIN, F.

23 years behind the wheel. Avt.transp.34 no.3:34 Mr '56.
(Sukhaneva, Valentina Fomiichna) (MLRA 9:7)

MURYGIN, G.,

Readers' letters [illegible]

1. Starshiy mekhanik diesel'-elektrokhoda "Angoyemar" (for Murygin).
2. Kapitan nauchno-issledovatel'skogo sudna "Okeanograf" (for Chekanskiy).

[illegible], I. I.

Rudenko, Ye. I., Veprintsev, I. I., and Murzin, I. I. - "On the possibility of using certain salt lakes of the Southern Astrakhan' group for thermolytic [illegible]", (Reports 1 and 2), Trudy Astrakh. gos. ped. in-ta, Vol. IX, 1948, p. 41-57.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 9, 1949).

MURYGIN, I. I.

Murygin, I. I. - "The existence of the phenomenon of analysis in freezing", Trudy Astrakh. gos. med. in-ta, Vol. IX, 1947, p. 73-78.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. ', 1949).

Murygin, V.I.

24(4) PHASE I BOOK EXPLOITATION SOV/3140

Akademiya nauk Ukrainskoy SSR. Institut fiziki

Fotoelektricheskiye i opticheskiye yavleniya v poluprovodnikakh; trudy pervogo vsesoyuznogo soveshchaniya po fotoelektricheskim i opticheskim yavleniyam v poluprovodnikakh, g. Kiyev, 20-26 noyabrya 1957 g (Photoelectric and Optical Phenomena in Semiconductors; Transactions of the First Conference on Photoelectric and Optical Phenomena in Semiconductors...) Kiyev, 1959. 403 p. 4,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Prezidium. Komissiya po poluprovodnikam.

Ed. of Publishing House: I. V. Kisina; Tech. Ed.: A. A. Matveychuk; Resp. Ed.: V. Ye. Lashkarev, Academician, Ukrainian SSR, Academy of Sciences.

PURPOSE: This book is intended for scientists in the field of semiconductor physics, solid state spectroscopy, and semiconductor devices. The collection will be useful to advanced students in universities and institutes of higher technical training specializing in the physics and technical application of semiconductors.

COVERAGE: The collection contains reports and information bulletins (the latter are indicated by asterisks) read at the First All-Union Conference on Optical and Photoelectric Phenomena in Semiconductors. A wide scope of problems in semiconductor physics and technology are considered: photoconductivity, photoelectromotive forces, optical properties, photoelectric cells and photoresistors, the actions of hard and corpuscular radiations, the properties of thin films and complex semiconductor systems, etc. The materials were prepared for publication by E. I. Rashboy, O. V. Snitko, K. B. Tolpygo, A. F. Lubchenko, and M. K. Sheynkman. References and discussion follow each article.

Photoelectric and Optical Phenomena (Cont.) SOV/3140

Processes in Alkali-Haloid Crystals 180

Murygin, V. I. Negative Photoconductivity of Selenium Photoelectric Cells With Positive Sign of the Photoelectromotive Force 191

Kolomiyets, B. T., and B. V. Pavlov. Displacement of the Edge of the Absorption Band in Vitreous Semiconductors of the System As_2Se_3-As_2Te_3 201

Vertsner, V. N., and A. N. Solov'yev. "Electronographic" [Combined Electro-Microscopic and Radiographic] Investigation of the Composition of Lead Sulfide Photoresistors According to the Thickness of Their Layers 207

Vertsner, V. N., B. V. Gorbunov, and Ya. A. Oksman. Structural Peculiarities of Photosensitive Sb_2S_3 Layers (Theses) 212

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24(3) SOV/166-59-1-6/11

AUTHORS: Gisina, F.A., and Murygin, V.I.

TITLE: Negative Photodiode Effect in Selenium Photocell (Otritsatel'nyy fotodiodnyy effekt v selenovykh fotoelementakh)

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 1, pp 55-62 (USSR)

ABSTRACT: In the present paper the authors try to explain theoretically the abnormal photoelectric effect (called by the authors negative photodiode effect) described by Murygin [Ref 18,19], which arises during a simultaneous influence of light and external voltage onto a selenium cell with a cadmium plating. The authors give explicit expressions for the countercurrent and its change under effect of light. The theoretical results agree qualitatively with the experimental data. The dependence of the considered effect on the temperature remains undefined. The authors mention A.F.Ioffe and A.V.Ioffe.
There are 4 figures, and 24 references, 11 of which are Soviet, 2 Bulgarian, 8 American, 2 German, and 1 English.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN Uz SSR (Physico Technical Institute of the AS Uz SSR)

SUBMITTED: October 14, 1958

Card 1/1

MURYGIN, V. I. Cand Phys-Math Sci -- "Negative photodiode effect of selenium photocells." Tashkent, 1960. (Tashkent State Univ im Lenin) (KL, 1-61, 180)

L 11150-63 EDS

ACCESSION NR: AT3002984 S/2927/62/000/000/0083/0086

AUTHOR: Asessorov, Yu. P.; Bakradze, O. G.; Geller, I. Kh.; Grinberg, I. S.; Mury*gin, V. I.; Nechayeva, R. Ye.; Smirnov, A. S. 45

TITLE: Effect of reverse current on forward resistance in selenium rectifiers [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 83-86

TOPIC TAGS: selenium rectifier creep, TVS selenium rectifier

ABSTRACT: Experimental studies of the "forward current-voltage characteristic creep" are described. A considerable increase in the forward voltage drop upon the passage of a reverse current is referred to as a "creep". It is very pronounced in TVS-type selenium rectifiers. The creep was measured at various temperatures within -70+130C, on a-c and pulsating current, at various reverse voltages. Forward current-voltage, forward voltage-temperature, forward voltage-time, forward voltage-reverse voltage, and forward voltage-frequency curves are presented. This explanation is offered for the creep: the diffusion potential, i. e. the contact potential

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L 11150-63

ACCESSION NR: AT3002964

difference between Se and CdSe, may vary as a result of charge variation in the deep impurity centers due to impact ionization. Orig. art. has: 8 figures.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 001 OTHER: 000

cf/Bur
Card 2/2

L 11145-63 EDS

ACCESSION NR: AT3002974 S/2927/62/000/000/0017/0029 45

AUTHOR: Avak'yants, G. M.; Grinberg, I. S.; Zaugol'nikova, Ye. G.; Mury*gin, V. I.

TITLE: Inductive properties of selenium rectifiers [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 17-29

TOPIC TAGS: selenium rectifier, selenium rectifier inductance

ABSTRACT: High-inductance semiconductor devices play a decisive role in development of subminiature apparatus. It was reported elsewhere that specially processed germanium diodes behave as inductance. The article offers a theoretical and experimental investigation of inductive properties of selenium rectifiers. Generation and recombination of carriers in the space charge of a hole-type-semiconductor rectifier are investigated matematically. Under the conditions of deep impurity levels and non-saturated reverse current, the semiconductor diode behaves as an inductance; deep impurities deter the carriers, and the energy is stored in the form of electric field of the space charge. The inductance of types AVS and TVS selenium rectifiers was measured, at audio frequency, on an a-c bridge with a 25-mv

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L 11145-63
ACCESSION NR: AP3002974

a-c signal and a d-c bias up to 30 v. "Investigation was carried out within -100 +120C temperature range." [Abstracter's note: only the data at +17, +35, +60, and +xxx are reported]. It was found that at low temperatures and high bias voltages the selenium rectifiers behave as inductance. Special rectifiers prepared in the laboratory exhibited inductance at room or higher temperatures and at low bias voltages. Rectifier reactance vs. bias, inductance vs. frequency, inductance vs. admittance, and reverse current vs. frequency curves are presented. Inductance of selenium rectifiers can be made very high; however, such rectifiers have a low (not over 1) Q-factor. Orig. art. has: 9 figures and 42 formulas.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 007 OTHER: 003

GS/bm
Card 2/2

L 11146-63 EWG
ACCESSION NR: AR3002975 S/2927/62/000/000/0029/0037

45

AUTHOR: Avak'yants, G. M.; Grinberg, I. S.; Mary'gin, V. I.

TITLE: Problem of inductance of semiconductor diodes
[Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy'rochny'ye perekhody' v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 29-37

TOPIC TAGS: selenium rectifier, selenium rectifier inductance, selenium-rectifier oscillator

ABSTRACT: In another article by Avak'yants, et al. (ibid., pp 17-29), the recombination of electrons from the conduction band to the impurity acceptor levels was neglected as well as the recombination of electrons to the free donor levels in the deep donor-level scheme. In the present article a complete set of differential equations of particle balance is considered. An oscillatory circuit comprising a semiconductor diode with a considerable bias voltage, a capacitance, and a negative resistance in series is analyzed theoretically. The behavior of a selenium diode in an oscillatory circuit was also tested experimentally. A point-contact D2-E

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ACCESSION NR: AT3002975

germanium diode was used as a negative resistance. Oscillograms presented in the article show that with a low bias, saw-toothed oscillations were set up; with a higher bias, the wave shape approaches the sine wave and the oscillation frequency diminishes. These indicants prove that the selenium rectifier acts as an inductance at higher bias voltages. Orig. art. has: 2 figures and 43 formulas.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 001 OTHER: 000

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Card 2/2

(2)

L 11046-63 EDS

58

ACCESSION NR: AT3002976 S/2927/62/000/000/0037/0040 57

AUTHOR: Avak'yants, G. M.; Grinberg, I. S.; Zaugol'nikova, Ye. G.; Mironenko, Z. P.; Nikiforova, Ye. P.; Mary*gin, V. I.

TITLE: Inductance of germanium and silicon diodes [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 37-40

TOPIC TAGS: D2-Ye germanium diode, D2-B germanium diode, P-401 germanium transistor, P-403 germanium transistor, germanium diode inductance, silicon photocell inductance

ABSTRACT: Results of an experimental investigation of point-contact germanium (D2-Ye and D2-B) diodes, junction-type germanium P-401 transistors, and laboratory-model silicon photocells are reported. The experimental hookup and methods were similar to those used for investigating selenium rectifiers (ibid., pp 17-29). It was found that the point-contact germanium diodes, with a negative bias in the region of drooping current-voltage characteristics, possess an inductance up to a few henrys; this inductance falls to zero when the supply frequency is increased to 10-15 kc. Inductance also was observed in the emitter-collector of P-403 and

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P-401 germanium transistors, with the base free. Silicon photocells, not illuminated, biased deep into the reverse-current region, with a 1-kc signal of 15-20 mv, exhibited inductance of a few henrys; however, the inductance was unstable in time. The effect is attributed to technological peculiarities in manufacturing the photocells. Curves representing the effect of the bias current, frequency, admittance, and bias voltage on the inductance of the above devices are given. Orig. art. has: 7 figures.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 001 OTHER: 001

Card 2/2

L 11149-63 EDS

ACCESSION NR: AT3002982 S/2927/62/000/000/0065/0076

AUTHOR: Avak'yants, G. M.; Mury*gin, V. I.; Tashabayev, A. 45

TITLE: Some properties of diodes with a high ratio of base length to the diffusion length of minority carriers [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 65-76

TOPIC TAGS: long diode, diode current-voltage characteristic, diode reactance

ABSTRACT: Theoretical studies based on two groups of previous investigations are reported. The first group included (a) a theory of current-voltage characteristic of a diode by E. I. Rashba and K. B. Tolpy*go (ZhTF, vol26, 1419, 1956) and (b) a theory of a p-i-n combination by M. Lampert and A. Rose (Phys. Rev. 121, 26, 1961). In both works the current was found to be proportional to the square of voltage. The second group was founded by V. I. Stafeyev (ZhTF, vol 28, 1631, 1958); the diodes were found to be very sensitive to the life of carriers, and the current was an exponential function of voltage. An attempt is made, in the article, to create a more general theory that would connect the above theories. Starting with the

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fundamental set of differential equations that describe transitions of majority and minority carriers in the base region of diode, the authors solve the set with certain limitations and simplifications, and arrive at final formulas for the current-voltage characteristic and the diode reactance. Orig. art. has: 70 formulas.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 002

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L 12904-63 EWP(q)/EWT(m)/BDS AFFTC/ASD RDW/JD 60
ACCESSION NR: AT3002989 S/2927/62/000/000/0105/0111 59

AUTHOR: Geller, I. Kh.; Zaugol'nikova, Ye. G.; Karageorgiy-Alkalayev, P. M.; Karimova, L. Z.; Kury*gin, V. I.; Nechayeva, R. Ye.

TITLE: Analyzing certain characteristics of selenium rectifiers [Report of the All-Union Conference on Semiconductor Devices held in Tashkent from 2 to 7 October 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 105-111

TOPIC TAGS: AVS selenium rectifier, TVS selenium rectifier, selenium rectifier current-voltage, selenium rectifier capacitance, selenium rectifier

ABSTRACT: Experimental data on AVS and TVS selenium rectifiers is compared with theoretical considerations. Current-voltage and capacitance characteristics of these types were determined within -120 +160C range. It was found that the diffusion potential decreases linearly as the temperature increases which agrees well with some published theoretical data. Reverse current-voltage characteristics determined experimentally, with various temperatures as parameters, showed that they represent different exponential functions; the

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L 12904-63

ACCESSION NR: AP3002989

latter depend on the temperature, not on the type of rectifier alone as was supposed in earlier published works. Differential resistance and capacitance of the above rectifiers were measured within a broad range of temperatures. Forward and reverse current-voltage characteristics, a diffusion-potential-temperature curve, and capacitance-voltage relations are given in the article, as well as interpretations of the physical phenomena involved. Orig. art. has: 7 figures, 1 formula, and 2 tables.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR); Akademiya nauk Uzbekskoy SSR (Academy of Sciences UzSSR) Tashkentskiy gosudarstvenny*y universitet (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 009 OTHER: 001

Card 2/2

L 13050-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AT3002996 S/2927/62/000/000/0139/0141

AUTHOR: Gulamova, M. A.; Kogan, L. M.; Maskin, S. S.; Mury*gin, V. I.

TITLE: Investigation of titanium-dioxide rectifiers acting as photodiodes [Report of the All-Union Conference on Semiconductor Devices held in Tashkent from 2 to 7 October 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 139-141

TOPIC TAGS: titanium-dioxide rectifier, photodiode

ABSTRACT: Joint effect of light and applied voltage on a titanium-dioxide rectifier coated with a semitransparent Ag film was investigated. As a photovoltaic cell, such a rectifier had a sensitivity of 0.1 mca per lum, and its photo-emf was 100-200 mv at 10,000 lux. As a photodiode, it had higher reverse currents at all voltages up to 10v, and the light-determined addition to the dark current was found to increase with higher voltages; in some cases it was a few hundred times as high as the photovoltaic-cell current. Photocurrent-voltage curves for 20,000 and 50,000 lux, photocurrent-time (light-dark) curves for 25, 80, and 140C, and a spectral-sensitivity distribution curve are presented in the article. The photodiode effect in titanium-dioxide rectifiers is similar in some

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L 13050-63
ACCESSION NR: AT3002996

respects to the negative photodiode effect in selenium photocells, the difference being that in the former the reverse current increases with illumination. This phenomenon is explained by deep-seated levels that tend to build up the space-charge concentration. Orig. art. has: 3 figures.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR); Akademiya nauk Uzbekskoy SSR (Academy of Sciences UzSSR); Tashkentskiy gosudarstvenny*y (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 000

Card 2/2

40947

S/109/62/007/007/015/018
D256/D308

AUTHORS: Avak'yants, G. M., Grinberg, I. S. and Murygin, V. I.

TITLE: Inductance of semiconductor diodes

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 7, 1962, 1214-1222

TEXT: Following a previous investigation of the inductive properties of semiconductor diodes induced by thermal effects (G. M. Avak'yants, AN SSSR. Izvestiya. Seriya fiz.-mat. 1955, 8), a theory of the inductive properties is developed considering the influence of the relaxation processes accompanying the impact ionization of impurities in the space-charge region of the diode. The phase-shift of the current against the voltage is expressed in terms of the transfer of electrons from the valence band on to the donor levels, neglecting the effects of the recombination of the holes by the donor level electrons as well as the thermal transitions of electrons from the donor levels into the conductivity band. It is shown that the energy can be stored in the semiconductor diodes as

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the energy of the space-charge field. Changes in the potential energy are induced by applying a small alternating potential due to the changes of the ionized impurity concentration following the impact ionization. The properties of inductive diodes in oscillatory circuits are discussed. There are 2 figures.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina, Fiziko-tekhnicheskiy institut AN UzSSR (Tashkent State University im. V. I. Lenin, Institute of Applied Physics AS UzSSR)

SUBMITTED: August 4, 1961

S/109/62/007/007/016/018
D256/D308

AUTHORS: Avak'yants, G. M., Grinberg, I. S., Zaugol'nikova, Ye. G. and Murygin, V. I.

TITLE: Inductive properties of selenium rectifiers

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 7, 1962, 1223-1229

TEXT: Inductive effects were observed experimentally when a bias voltage was applied in the reverse direction across the elements. The impedance of the selenium rectifiers was measured by a bridge method for temperatures ranging from -100 to +120°C in the presence of reverse bias voltages up to 30 V. The inductive properties were described in terms of the 'negative capacitance' of the rectifier defined by: $\omega L = 1/\omega C^{-}$. The results are presented in the form of inductance and capacitance curves as functions of the bias voltage for various temperatures. The inductive properties of selenium rectifiers occur at low temperatures, though rectifiers showing negative capacitance at room temperature were pointed out by the

authors. It is also pointed out that the Q-values of selenium rectifiers are always below unity. The frequency characteristics of selenium and germanium diode rectifiers in oscillatory circuits were also investigated. The results of the experiments are compared with the theory of Avak'yants et al. (Radiotekhnika i elektronika, v. 7, no. 7, 1962, 1214-1222). Conclusions: Inductance of selenium and germanium rectifiers can reach large values, their Q-values being rather low. The latter disadvantage can be compensated for by including a negative resistivity element in series with the diode. There are 10 figures. The most important English-language reference reads as follows: M. Schuller and W. Gartner, Electronics, 1960, 33, 17, 60.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina, Fiziko-tekhnicheskiy institut AN UzSSR (Tashkent State University im. V. I. Lenin, Institute of Applied Physics AS UzSSR)

SUBMITTED: June 21, 1961

L 10265-63

ACCESSION NR: AP3000564 S/0109/63/008/005/0821/0829

AUTHOR: Avak'yants, G. M.; Mury*gin, V. I.; Teshabayev, A. 44

TITLE: Some properties of diodes having a large ratio of the base length to the diffusion length of minority carriers

SOURCE: Radiotekhnika i elektronika, v. 8, no. 5, 1963, 821-829

TOPIC TAGS: "long" semiconductor diodes

ABSTRACT: A generalized theory of "long" semiconductor diodes is offered which considers the flow of carriers in the current electric field of the base. Formulas for calculating static and dynamic current-voltage characteristics are developed. Inductive reactance of the "long" diode is investigated. Quasineutrality in the base and a weak a-c signal are assumed. Orig. art. has: 57 equations.

ASSOCIATION: Tashkent*skiy gosudarstvenny*y universitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 21May62 DATE ACQD: 30May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 002

Card 1/1 ja/nh

L 19703-63 EDS

ACCESSION NR: AP3006463 S/0109/63/008/009/1594/1601

47

AUTHOR: Avak'yants, G. M.; Atakulov, B.; Mury*gin, V. I.; Ozheredov, A. D.; Teshabayev, A.

TITLE: Active and reactive currents in an asymmetrical electron-hole junction with high injection levels

SOURCE: Radiotekhnika i elektronika, v. 8, no. 9, 1963, 1594-1601

TOPIC TAGS: semiconductor, electron-hole junction, asymmetrical junction

ABSTRACT: A theoretical investigation is presented of the majority-carrier (electron) current in the base of an asymmetrical p-n junction. It is claimed that no "adequately complete and rigorous statement of this problem" has ever been published. It is assumed that: (a) the hole band is highly alloyed; (b) the electron (base) band is relatively lightly alloyed; (c) a strong electron recombination band exists within the junction. On the basis of the expressions for generation/recombination hole and electron currents in the junction, an equation for the voltage drop across the p-n junction is set up and solved. Static and dynamic current-voltage characteristics are described analytically; diode reactance

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ACCESSION NR: AP3006463

is evaluated, as well as the inductance of "short" diodes. A combination of inductive characteristics of the diode with the negative resistance to the forward current is held possible. I. Landany's work (IRE Trans. Electron Devices, 1960, ED-7, 303) is criticized. Orig. art. has: 63 formulas.

ASSOCIATION: Tashkent*skiy gosudarstvenny*y universitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 02Jul62 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 003

Card 2/2

AVAK'YANTS, G.M.; MURYGIN, V.I.; SANDLER, L.S.; TESHABAYEV, A.; YUROVSKIY, A.V.

Properties of an electron-hole junction in the straight-line direction at large current densities. Radiotekh. i elektron. 8 no.10:1776-1782 O '63. (MIRA 16:10)

AVAK'YANTS, G.M.; MURYGIN, V.I.; SANDLER, L.S.; TESHABAYEV, A.; YUROVSKIY, A.V.

Straight branch of the voltampere characteristic of thin diodes at high injection levels. Radiotekh. i elektron. 8 no.11:1919-1926 N '63. (MIRA 17:1)

L 21348-65 EEC(b)-2/EEC(k)-2/EWA(h)/EWG(k)/EWT(1)/EWT(m)/EWP(b)/T/EWP(t) Pm-4/
Pz-6/Pab BSD/ASD(a)-5/AFWL/ESD(t)/IJP(c) RDW/JD
ACCESSION NR: AP5000859 S/0166/64/000/005/0053/0057

AUTHOR: Avak'yants, G.M.; Zaugol'nikova, Ye. G.; Murygin, V.I.; Tserfas, R.A.

TITLE: Some properties of inductive selenium rectifiers

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 5, 1964, 53-57

TOPIC TAGS: selenium rectifier, audio frequency generator, semiconductor, inductive rectifier, semiconducting inductance

ABSTRACT: The present work continues the investigation of the previously reported inductive effect observed in selenium rectifiers (Avak'yants et al., Radiotekhnika i elektronika, 1962, No. VII, vol. 7, pages 1214 and 1223). Measurements have shown that the inductive properties of selenium rectifiers are related to the exponential current-voltage dependence reported by Karageorgiy-Alkalayev (Izvestiya AN UzSSR, Seriya fiziko-matematcheskikh nauk, 1961, 2, 12). The dynamic volt-ampere curves of the inductive selenium rectifier have a peculiar "figure-eight" shape as shown in Fig. 1 of the Enclosure. For small instantaneous voltages the element gives a capacitive phase shift, for large values—an inductive phase shift. Selenium rectifiers biased in the region of large inverse currents possess a semiconducting inductance, i.e. they can store the energy of an electric field and transfer it to other parts of a circuit. Although the impedance of the

Card 1/3

rectifier is found to have an appropriate frequency dependence, the element cannot be used as a choke filter, because of its high DC resistance. With the addition of external circuitry to provide compensating negative resistance, the selenium rectifier can be used to generate audio frequencies. Under certain conditions the deep levels do not act to impede the carriers and give an inductive effect, but, as a result of the intense ionization in the presence of a strong electric field in the contact region, they form a region with an increased concentration of ionized impurities which leads to an anomalous frequency-dependent growth of reverse current and capacitance. Orig. art. has: 6 figures.

ASSOCIATION: Tashkentskiy gosuniversitet im. V.I. Lenina (Tashkent State University)

SUBMITTED: 12Nov63 ENCL: 01 SUB CODE: EC

NO REF SOV: 003 OTHER: 000

AVAK'YANTS, G.M.; ZAUGOL'NIKOVA, Ye.G.; MURYGIN, V.I.; TSERFAS, R.A.

Some properties of induction selenium rectifiers. Izv. AN Uz. SSR.Ser.fiz.-mat.nauk 8 no.5:53-57 '64.

(MIRA 18:2)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina.

L 20016-65 ASD(a)-5/AFWL/ESD(c)/ESD(t)
ACCESSION NR: AP4038647 S/0109/64/009/005/0868/0875

AUTHOR: Avak'yants, G. M.; Atakulov, B.; Mury*gin, V. I.; Teshabayev, A.; Tserfas, R. A.

TITLE: Some patterns in the current-voltage characteristics of long diodes

SOURCE: Radiotekhnika i elektronika, v. 9, no. 5, 1964, 868-875

TOPIC TAGS: diode, semiconductor diode, current voltage characteristic, Ge diode, Si diode

ABSTRACT: New approximate formulas are offered which describe the linear segment of the current-voltage characteristic of a long-base diode with the assumption that a greater part of the applied voltage drops in the diode body. The formulas are valid for three intervals of high-level injection. Experimental verification was performed with n-Ge long-base (1.5-6 mm) diodes with a resistivity of 27-28 ohms.cm and a diffusion length of 2.5×10^{-2} cm. The current-voltage

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L 20016-65
ACCESSION NR: AP4038647

characteristics of a 3.5-mm-thick base were also measured at +20, 0, -20, and -60C. Generally, a good agreement between the theoretical and experimental curves is noted. The current-voltage characteristic of an n-Si Au-alloyed long-base (0.1 mm) diode was also measured. Orig. art. has: 8 figures, 18 formulas, and 2 tables.

ASSOCIATION: Tashkent*skiy gosudarstvenny*y universitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 18Feb63 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 001

Card 2/2

L 8244-66
ACC NR: AP5022436 SOURCE CODE: UR/0109/65/010/009/1700/1706

AUTHOR: Avak'yants, G. M.; Dmitriyenko, I. L.; Muryzin, V. I.

ORG: none

TITLE: Properties of "long" diodes

SOURCE: Radiotekhnika i elektronika, v. 10, no. 9, 1965, 1700-1706

TOPIC TAGS: semiconductor diode, junction diode

ABSTRACT: An analysis is offered of a new theoretical model of the "long" diode which consists of a two-layer structure with one injection junction, the diode base being located next to the back contact; the rate of surface recombination is assumed to be constant. By setting up, solving, and analysing a differential equation describing the processes in the "long" diode, this formula for its I-V characteristic is derived: $V = 2s_p d/3u_p$, where d is the back-contact coordinate. This formula and other relations indicate the possibility of two types

UDC: 621.382.29.001.5

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L 8244-66
ACC NR: AP5022436

of I-V characteristics in "long" diodes: (1) The characteristic starts with an Ohm's-law segment, then a $j \approx V^2$ segment follows, then V = const., and finally, $j \approx V^5$; (2) The Ohm's-law segment, then a segment obeying the above I-V characteristic formula, and finally, $j \approx V^5$. Orig. art. has: 59 formulas.

SUB CODE: 09 / SUBM DATE: 13Dec63 / ORIG REF: 006 / OTH REF: 001

Card 2/2

L 8780-66 EEC(k)-2/EWA( )/EWT(1)/EWT(m)/T/EWP(b)/EWP(t) IJP(c) JD

ACC NR: AP5027626 SOURCE CODE: UR/0109/65/010/011/2037/2045

AUTHOR: Avak'yants, G. M.; Atakulov, B. A.; Dmitriyenko, I. L.; Murygin, V. I.; Tserfas, R. A.

ORG: none

TITLE: Problem of the forward branch of the current-voltage characteristic of gold-doped-base silicon diodes

SOURCE: Radiotekhnika i elektronika, v. 10, no. 11, 1965, 2037-2045

TOPIC TAGS: semiconductor diode, silicon diode, current voltage characteristic

ABSTRACT: The results of experiments with (50—300-kohm.cm) Si-diodes doped by Au (0.1% Sb admixture) are reported; in some cases, the n^+-layer was obtained by phosphorus diffusion. Six varieties of experimental I-V characteristics had a segment of negative resistance followed by a segment of independent I/V relation;

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UDC: 621.382.2:546.28

L 8780-66

ACC NR: AP5027626

the latter segment occupies a large current interval and starts from 1.5—7 v. As neither M. A. Lampert's theory (Phys. Rev., 1962, 125, 126) nor R. Hall's theory (Proc. IRE, 1952, 40, 1512) can explain such a shape of the I-V characteristic, the authors offer a new theory based on the kinetics of carrier transitions near deep levels and on the formation of space charges in the dielectric-like semiconductor material. They also offer an empirical formula which describes both mechanisms behind the above I-V characteristic. Additional experiments with the diodes at -59-24— -4+49C corroborated the new theory: the negative-resistance segment vanished at higher temperatures. "E. G. Pel' carried out the lifetime measurements." Orig. art. has: 7 figures and 12 formulas.

SUB CODE: 09 / SUBM DATE: 05Jun64 / ORIG REF: 001 / OTH REF: 003

jw
Card 2/2

L 7794-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP5027631 SOURCE CODE: UR/0109/65/010/011/2074/2077

AUTHOR: Arak'yants, G. M.; Alimova, L. I.; Murygin, V. I.; Skripnikov, Yu. S.; Tsarfas, R. A.

ORG: none

TITLE: Selective properties of silicon diodes with gold-doped base

SOURCE: Radiotekhnika i elektronika, v. 10, no. 11, 1965, 2074-2077

TOPIC TAGS: silicon diode, semiconductor diode

ABSTRACT: Results are reported of an experimental investigation of an Au-doped-base silicon diode used as a parallel oscillatory circuit thanks to the falling-off branch of its I-V characteristic (N. Holonyak, Proc. IRE, 1962, 50, 12, 2421). Biased to the negative-resistance region, the diode behaved like a high-Q oscillatory circuit; biased to the edge of the positive-resistance region, it

Card 1/2

UDC: 621.382.2:546.28:621.391.8

L 7794-66
ACC NR: AP5027631

exhibited the characteristics of a low-Q oscillatory circuit. In addition to the fundamental resonance curve, a number of resonance peaks at various multiple frequencies were observed; higher applied voltages resulted in distorted (asymmetrical) resonance curves. A compound peaked high-Q resonance curve was exhibited by some specimens. As a rule, the resonance frequency increased with the bias current. As a parametric amplifier the silicon diode developed a voltage gain of 15—25. A transistor circuit, in which the resonant silicon diode was connected in lieu of the collector load, could be operated as an amplifier from a 9—12-v supply-voltage source. Orig. art. has: 7 figures.

SUB CODE: 09 / SUBM DATE: 05Jun64 / ORIG REF: 004 / OTH REF: 001

BW
Card 2/2

L 7793-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP5027632 SOURCE CODE: UR/0109/65/010/011/2077/2081

AUTHOR: Avak'yants, G. M.; Zuyev, A. V.; Murygin, V. I.; Skripnikov, Yu. S.; Surov, V. P.; Tserfas, R. A.

ORG: none

TITLE: Amplifying and oscillating properties of silicon diodes with gold-doped base

SOURCE: Radiotekhnika i elektronika, v. 10, no. 11, 1965, 2077-2081

TOPIC TAGS: silicon diode, semiconductor diode

ABSTRACT: The results of an experimental investigation of the operation of a silicon diode as a voltage amplifier and as an oscillator are reported. A simple amplifier circuit consisting of a capacitor in series with the diode developed a voltage gain of 18—20 and a power gain of 200—300; its resonance frequency and

Card 1/2 UDC: 621.382.2:546.28:621.375+621.373

L 7793-66

ACC NR: AP5027632

passband depended on the bias current; its maximum sensitivity was 5—10 mv, and in some specimens, 200—300 mv. The noise in such a circuit was incoherent, sinusoidal, and had a maximum coinciding with the resonant frequency. As an oscillator, the silicone diode developed a practically sinusoidal waveshape; both its frequency and amplitude depended largely on the bias current and external capacitance. Orig. art. has: 7 figures.

SUB CODE: 09 / SUBM DATE: 05Jun64 / ORIG REF: 004 / OTH REF: 001

nw

Card 2/2

TRYGIN, V.Ye., assistent; [illegible]

Methods for the [illegible]
treaty MTLP no.[illegible] 63.

[illegible] kafedra tekhnologii [illegible]
tekhnologicheskogo [illegible]

KOMISSAROV, A.I., kand. tekhn. nauk, dotsent; MURYGIN, V. Ye., assistent

Formation of the loop overlap in shuttle sewing machines. Nauch. trudy MTILP no.26:158-169 '62. (MIRA 17:5)

1. Kafedra mashin i apparatov legkoy promyshlennosti Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

VIL'KOVA, S.N.; MURYGINA, M.G.

Chromatographic study of cotton stalk lignin. Zhur.prikl. khim. 33 no.7:1628-1632 Jl '60. (MIRA 13:7)
(Lignin)

VIL'KOVA, S.N.; MURYGINA, N.G.

Irradiation of cotton stalk lignin with γ-rays from Co^{60}.
Zhur.prikl.khim. 33 no.7:1674-1676 Jl '60. (MIRA 13:7)

(Lignin) (Gamma rays)

MURYLEV, N.F., inzh.

Tabular method of centering couplings on coupled mechanisms. Sudostroenie 27 no.6:64-66 Je '61. (MIRA 14:6)
(Couplings)

31314
S/124/61/000/010/054/056
D251/D301

18.8200

AUTHORS: Vereshchagin, I.F., Muryleva, L.K. and Klebutin, G.S.

TITLE: The effect of the tempering temperature on the mechanical properties of plastic torsion of low-carbon steel

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 10, 1961, 63, abstract 10 V524 (Uch. zap. Permsk. un-t, 1960, 17, no. 3, 35-42)

TEXT: The effect is investigated of tempering at temperatures from 350-650° for 3 hours on the mechanical properties under tension of specimens of steel Ст.0 (St.0) preliminarily hardened by torsion of one to six turns. It is shown that tempering at 350° evokes high durability and a considerable lowering of the plasticity, the optimum properties are obtained with tempering in the interval 350-500°, and tempering at 530-570° evokes a greater lowering in the characteristics of plasticity. [Abstracter's note: Complete translation]

Card 1/1

25448
S/137/61/000/006/080/092
A006/A101

18 8200

AUTHORS: Vereshchagin, I.F., Muryleva, L.K., Khlebutin, G.S.

TITLE: Changes in the mechanical properties of low-carbon steel during torsion

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 5-6, abstract 6I35 ("Uch. zap. Permsk. un-t", v. 17, no. 3, 27 - 34)

TEXT: Since 1955 the authors have studied the effect of residual stresses on the mechanical properties of metals. An attempt of using off-center tension in order to strengthen the marginal threads of the specimen, did not yield satisfactory results, due to the impossibility of determining experimentally the range and degree of plastic deformation. In 1956 the authors used deformation by torsion in order to strengthen the metal. Plastic torsion of round specimens was carried out on a AM-1 type torsion test machine. The specimens were made of Ст.0 (St.0) grade steel of the following composition (in %): C 0.1, Si 0.17, Mn 0.35, P 0.014, S 0.025, Cr 0.02, Ni 0.1. Reduction of the metal in the cross section of the specimen takes place corresponding to the developing plastic deformation during the torsion of the specimen. The magnitude of reduction is the

Card 1/2

Changes in the mechanical properties ... 25448 S/137/61/000/005/080/092 A006/A101

greater, the larger the torsion angle. This reduction entails uniform extrusion and homogeneous flow of the specimen metal. At such a homogeneous plastic metal flow, a field of residual normal stresses can not develop in the cross section after unloading of the specimen. The authors analyze the problems of raising the steel strength during torsion for the case when the pre-operational cold hardening does not coincide with the direction of the operational load. It was established that cold hardening by plastic torsion raised the shearing strength of ЭЯ 2(EYa2) steel to a lesser degree than preliminary cold hardening by tension, compression and drawing.

[Abstracter's note: Complete translation]

F. Rumyantseva

Card 2/2

MURYSEV, Aleksandr Sergeyevich; KOZHEVNIKOVA, V.A., red.; YASHEN'KINA, Ye.A., tekhn. red.

[Storming new frontiers]Na novye rubezhi. Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1960. 108 p. (MIRA 15:10)
(Kuybyshev Province—Economic conditions)

L 1962-66 EWT(m)/T/EWA(m)-2

ACCESSION NR: AT5024122 UR/3138/65/000/348/0001/0015

AUTHOR: Vishnevskiy, N. Ye.; Galanina, N. D.; Semenov, Yu. A.; Krupchitskiy, P. A.; Berezin, V. M.; Murysov, V. A.

TITLE: Measurement of the difference in the masses of K_2^0- and K_1^0- mesons

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut teoreticheskoy i eksperimental'noy fiziki. Doklady, no. 348, 1965. Izmereniye velichiny raznosti mass K_2^0- and K_1^0. 1-15

TOPIC TAGS: meson beam, K meson, pi meson

ABSTRACT: The value of the difference in the masses of K_2^0- and K_1^0-mesons was obtained by measuring the dependence of the intensity of coherent regeneration of K_1^0-mesons in a beam of K_2^0-mesons on the thickness of the regenerator (copper and aluminum). K_1^0-mesons were recorded on the basis of the decay $K_1^0 \to \pi^+ + \pi^-$ with the aid of a magnetic spectrometer with scintillation counters and spark chambers. The distributions of the events over the mass of the decaying particle and angle between its momentum and the direction of the primary beam are given. In all, 196 events of coherently regenerated K_1^0 mesons were recorded. The value $\Delta m = (0.62 \pm 0.14)\hbar/\tau_1 c^2$ was obtained. "The authors thank Academician A. I. Alikhanov and

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L 1962-66
ACCESSION NR: AT5024122

S. Ya. Nikitin for their interest in the work, L. B. Okun' and I. Yu. Kobzarev for their discussion, L. L. Gol'din and members of the technical staff for supervising the operation of the accelerator, and A. K. Dubasov, V. N. Markizov, N. P. Naumov, V. N. Kuz'menkov, and Yu. S. Oreshnikov for assistance in setting up the apparatus and for carrying out the measurements." Orig. art. has: 4 figures, 1 formula.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki, Gosudarstvennyy komitet po ispolzovaniyu atomnoy energii (Institute of Theoretical and Experimental Physics, State Committee for Application of Atomic Energy)

SUBMITTED: 18Apr65 ENCL: 00 SUB CODE: NP

NO REF SOV: 005 OTHER: 005

Card 2/2

L 26378-66 EWT(m)/T

ACC NR: AP6017591 SOURCE CODE: UR/0367/66/003/002/0321/0326

AUTHOR: Vishnevskiy, M. Ye.; Galanina, N. D.; Semenov, Yu. A.; Kruptchitskiy, P. A.; Berezin, V. M.; Muryagov, V. A.

ORG: none

TITLE: Measurement of the mass difference of K_2^0 and K_1^0 mesons

SOURCE: Yadernaya fizika, v. 3, no. 2, 1966, 321-326

TOPIC TAGS: K meson, mass spectrometry, pion, meson interaction

ABSTRACT: In view of the discrepancies between the experimentally measured mass differences of the K_2^0 and K_1^0 mesons, the authors have measured this mass difference by a coherent regeneration method, based on measurement of the dependence of the intensity of the coherent regeneration of K_1^0 mesons in a beam of K_2^0 mesons on the thickness of the regenerator (copper or aluminum). The experiment was carried out in the ITEF 7-Gev proton accelerator (Fig. 1). The method and the apparatus are briefly described. The K_1^0 mesons were registered by means of the $K_1^0 \to \pi^+ + \pi^-$ decay with the aid of a magnetic spectrometer with scintillation counters and spark chambers. The distributions of the interaction events with respect to the masses of the decaying particle and with respect to the angle between its momentum and primary-beam directions are given. A total of 196 coherently-regenerated K_1^0 mesons were found in 375 tracks. A mass difference of 0.82 ± 0.14 ($\hbar/\tau_1 c^2$), where $\tau_1 = 0.92 \times 10^{-10}$ sec, was obtained. The distribution of the registered K_1^0 mesons had a maximum at 1.8 Gev/c and dropped to zero at 0.9 and 4 Gev/c. This result agrees well with those obtained by others

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L 36378-66

ACC NR: AP6017591

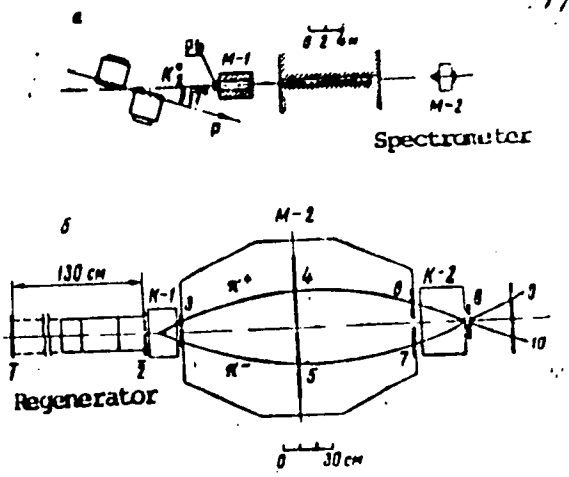

Fig. 1. Experimental setup. a - Beam diagram, b - magnetic spectrometer diagram (the numbers denote particle counters).

using similar methods. The authors thank A. I. Alikhanov and S. Ya. Nikitin for interest in the work, L. B. Okun' and I. Yu. Kobzarev for discussions, L. L. Gol'din and his crew for operating the accelerator, and A. K. Dubasov, V. N. Markizov, N. P. Naumov, V. F. Stolyarov, V. N. Kuz'menkov, and Yu. S. Oreshnikov for help with the apparatus and the measurements. Orig. art. has: 4 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 30Jun65/ ORIG REF: 003/ OTH REF: 005

Card 2/2 mal

MURZA, B.

USSR/ Miscellaneous - Conferences

Card 1/1 Pub. 89 - 2/33

Authors : Murza, B., and Glezerman, Ye.

Title : The vanguard of socialist competition

Periodical : Radio 2, 3-4, Feb 56

Abstract : Persons from various factories and enterprises in the field of radio and associated lines report how they stepped up their work as a sign of solidarity with the 20th convention of the Communist party. Illustration.

Institution : .....

Submitted : .....

MURZA, F.M.; KATS, A.M.

Accelerated method for the filtering of concentrates. Apt. delo 14 no.1:70-72 Ja-F '65. (MIRA 18:10)

1. Nauchno-issledovatel'skaya aptechnaya stantsiya Moskovskogo gorodskogo aptechnogo upravleniya.

USSR/Aeronautics - Fuel System, Maintenance Oct 49

"Some Problems of Operating Aircraft Fuel Systems," Lt Col I. Murza

"Vest Vozdush Flota" No 10, pp 41-44

Emphasizes extreme importance of keeping avn fuel in pure state. Describes various-type fuel filters, procedure for filling aircraft fuel tanks and maintenance and inspection of filling equipment.

1735

MURZA, I. (Col.)

"Some Peculiarities of Aircraft Operation in Winter," (Onekotorykh osobennostyakh zimney ekspluatatsiya sameletov), Vest Voz. Flota, No 9, pp 66-68, 1951

Translation D 165626, Sep 51

MURZA, I. (Col., Engr.)

"Some characteristics on the winter operation of airplanes," The Herald of the Air Fleet, 1952.

MURZA, I.S.; SHEVEL'KO, P.S.; BRAGA, V.G.; ALEKSEYEV, B.A.; GORBACHEV, F.A.; SUKHANOV, S.S.; NEFEDOV, D.I., inzh.-polkovnik zapasa, red.; VYZVILKO, S.A., inzh.-kapitan 2 ranga, red.; SOLOMONIK, R.L., tekhn. red.

[Manual for an aircraft technician] Spravochnik aviatsionnogo tekhnika. Moskva, Voen. izd-vo M-va obor. SSSR, 1961. 510 p. (MIRA 15:3)

(Airplanes)

L 20088-65 EWT(d)/EWT(l)/EWT(m)/FA/EWA(d)/EWP(j)/T-2/T/EWP(t)/EWP(h)/EED-2/EWP(b)/
FS(b) Pc-4/Pq-4 SSD/AEDC(a)/AFWL/AS(mp)-2/AFETR/AFTC(a) JWA/TT/JD/MLK/RM

ACCESSION NR AM4049516 BOOK EXPLOITATION S/

Murza, I. S.; Shevel'ko, P. S.; Braga, V. G.; Alekseyev, P. A.; Gorbachev, F. A.; Sukhanov, S. S.

Handbook for an aircraft technician (Spravochnik aviatsionnogo tekhnika), 2d ed. rev., Moscow, Voyenizdat, 1964, 510 p. illus., index. 35,000 copies printed.

TOPIC TAGS: aircraft structure, aircraft material, aviation fuel, aviation lubricant, aircraft radio equipment, thermodynamics, gasdynamics, aviation engine

PURPOSE AND COVERAGE: This manual is intended for aircraft technicians with secondary general or aviation technical education. It can also be useful for flight mechanics in the Air Force and other aviation specialists. The handbook contains brief information on the general disciplines -- physics, thermodynamics, gasodynamics, electrical engineering, radio engineering and the special disciplines -- strength of materials, aviation materials, aircraft strength, aerodynamics, aviation engines, aviation fuels and lubricants.

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ACCESSION NR AM4049546

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Ch. VIII. Aircraft strength -- 310
Ch. IX. Aviation engines -- 343
Ch. X. Aviation fuels and lubricants -- 414
Ch. XI. General handbook information -- 456

SUB CODE: AC SUBMITTED: 05Mar64 NR REF SOV: 055

OTHER: 000

Card 2/2

MASHUKOV, P.M.; MURZA, L.M.

Flood centers of mountain rivers in Central Asia. Trudy Sred.-Az. nauch.-issl.gidrometeor.inst. no.7:77-82 '61. (MIRA 15:3)
(Soviet Central Asia--Runoff)

MIRZA, [redacted]

Effecto of soil conditions on the quality of cotton fiber. Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 7 no.9:69-75 S '54. (MLRA 9:8)

1. Armyanskiy nauchno-issledovatel'skiy institut tekhnicheskikh kul'tur.

(Armenia--Cotton growing)

MURZA, N. S.:

MURZA, N. S.: "The effect of agrotechnical and soil conditions on the technological properties of cotton fiber under conditions of the Armenian SSR." Min Higher Education USSR. Armenian Agricultural Inst. Yerevan, 1956. (Dissertion For the Degree of Candidate in Agricultural in Sciences.)

Knizhnaya letopis', No. 39, 1956. Moscow.

MURZA, V.

Functional conditions of the adrenal cortex in rheumatism. Liet. TSR Moksl. akad. darb. [Biol] 1:217-225 '62.
(ADRENAL CORTEX physiol) (RHEUMATISM physiol)

BUBNOV, Ye.S.; KARDYSH, V.G.; MURZAKOV, B.V.

Modern methods for sinking in moraine sediments and rocks analogous according to drilling conditions. Razved. i okh. nedr 31 no.7:26-33 Jl '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya, Moskva (for Bubnov).

KISELEV, Nikolay Aleksandrovich; [illegible], red.

[Industrial [illegible] systems] [illegible] ustanovki. Izd.2. [illegible], Izd-vo "Energiia," 1965. [illegible] p. [illegible]

P/042/60/000/011/003/003
A076/A026

AUTHOR: Murza-Mucha, Paweł, Master of Engineering

TITLE: Ultrasonic Welding Used in Repairing Molding Faults

PERIODICAL: Przegląd Odlewnictwa, 1960, No. 11, pp. 320 - 322

TEXT: The author lists a number of advantages of the ultrasonic welding method in repairing molding faults: he describes the cavitation process of metal molecules during an ultrasonic welding process and an ultrasonic welder produced by the "Mullard" firm. There are 9 figures and 5 references: 4 English and 1 German.

SUBMITTED: March 14, 1960

Card 1/1

88508
P/042/60/000/012/001/003
A076/A026

11500

AUTHOR: Murza-Mucha, Paweł, Master of Engineering

TITLE: The Influence of Ultrasounds on Crystallization and the Properties of Metals and Casting Alloys

PERIODICAL: Przegląd Odlewnictwa, 1960, No. 12, pp. 345 - 353

TEXT: The author generally describes the influence of ultrasound on crystallization and on the properties of metals and casting alloys, he reviews results obtained during investigations conducted in the USA, the USSR, Great Britain and West Germany. It is taken into consideration that liquid metal subjected to ultrasonic vibration is caused to form a fine structure and obtains several physical and chemical phenomena, with the result that these changes may be used to improve the castings and to produce new casting alloys, e.g. Al-Pb, which could not be mixed with the methods known so far. The mechanism of these changes partially explains the phenomenon of cavitation occuring in liquid metal subjected to the influence of ultrasonic vibrations. To investigate the influence of ultrasound on the structure and mechanical properties (Rr and HB) of zinc and LA1 and LA63 alloys, tests were made at the Pracownia Czynnych Zastosowań Ultradźwięków, Zakład Badań Drgań Instytutu Podstawowych Problemów Techniki (Laboratory of Ultrasound Applica-

Card 1/2

88508

P/042/60/000/012/001/003
A076/A026

The Influence of Ultrasounds on Crystallization and the Properties of Metals and Casting Alloys

tion, Vibration Section of the Institute of Basic Technological Problems) in Warsaw. A magnetostriction generator with an acoustic power of 40 w and a vibration frequency of 21 kc was used in the tests. Samples with 18-mm diameter, cast in dies, subjected to the effect of sound displayed a marked refinement of the structure under this influence and an increase in tensile strength on the average of 19.5% and a hardness of 5%. There are 13 photographs, 5 figures and 3 tables and 16 references: 7 Polish, 1 Soviet, 1 Czech, 3 German and 4 English.

SUBMITTED: February 8, 1960

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18(1,3,7)

P/005/60/000/13/010/040
D013/D049

AUTHOR: Murza-Mucha, Paweł, Master of Engineering

TITLE: Ultrasonic Waves in Metal Technology Application in Metallurgy and Casting

PERIODICAL: Przegląd Techniczny, 1960, Nr 13, pp 13-16

ABSTRACT: This article deals with the use of ultrasonic waves in metallurgical and casting processes in order to improve the structure and mechanical properties of casts, ingots, and alloys. The author generally describes the development of the ultrasonic wave method, and has based this article on Western experience and on his own research. Particularly, he describes the introduction of ultrasonic waves in liquid alloys, structure refinement of casts and increasing their mechanical properties (cavitation), degasification process, and dispersion phenomena. Beginning in 1947 , laboratory and semi-technical tests have been carried

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D013/D049

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out on various metals and alloys such as Al-Si, Al-Zn, Al-Pb, Al-Cd, Zn-Fe, Zn-Pb, brass and bronze, bronze-graphite, steel-graphite, cast iron, steel, and special alloys such as "Nimonic 75" (Ni, Cr 20%) used for production of blades for gas turbines. Application of ultrasonic waves in industry was initiated by the Soviet scientists, S. Sokolov, who constructed the first laboratory defectoscope in 1928, and completed research on the effects of ultrasonic waves on metal crystallization. Ultrasonic waves are now being applied on an industrial scale for improvement of ingots. The author conducts research on ultrasonic wave effects on physical properties and crystallization of alloys at the Zakład Badania Drgań Instytutu Podstawowych Problemów Techniki PAN (Section of Vibration Research of the Insti-

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tute for Basic Engineering Problems, Polish Academy of Sciences). The author presents the structure of LA1 alloy which consists of Si 12-13.5%, Mg 0.8-1.5%, Ni 0.5-1.5%, and Al; admissible impurities of Fe, Zn, and Mn totalling 1%. Photos Nr 1,2,5,7, and 8 show author's research results. There are 7 photographs, 1 set of photographs, and 3 figures.

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MURZA-MUCHA, Pawel, mgr.inz.

Ultrasonics applied in soldering, thermic treatment and welding of metals. Przegl techn 81 no.14:11-13 Ap '60.

MURZA-M'ICHA, F., mgr., inz.

New Perspectives for the development of cupola furnace processes.
Przegl techn 81 no.8:4-6 '60.

MURZA-MUCHA, Pawel, mgr.,inz.

Application of ultrasonic waves in metallurgy and foundry.
Przegl. techn 81 no.13:13-16 Mr '60.

MURZA-MUCHA, Pawel

Professor Stanislaw Szczawinski; an obituary. Przegl odlew 11 no.12:353-354 '61.

MIRZA-MUCHA, Pawel, mgr inz.

Iron foundries of the local and cooperative industries of the city of Warsaw and the Warsaw Voivodeship. Przegl techn no.2:8 10 Ja '62.

MURZA-MUCHA, Pawel

Technological publications for the use of workshops. Przegl odlew 12 no.11:363-364 N '62.

MURZA-MUCHA, Pawel

Production of surface hardened synthetic molds and cores bound with silica flour. Przegl odlew 14 no.10:288-294 O '64.

L 45374-66 T/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AT6026431 SOURCE CODE: PO/2504/66/000/017/0051/0080

46
44
B+1

AUTHOR: Murza-Mucha, P.

ORG: Casting Department, Warsaw Politechnic (Katedra odlewnictwa, politechniki Warszawskiej)

TITLE: Ultrasonic effect on the crystallization of metals and alloys during solidification and structural changes in the solid state

SOURCE: Warsaw. Politechnika. Zeszyty naukowe, no. 125, 1966. Mechanika, no. 17, 51-80

TOPIC TAGS: ultrasonic effect, metal crystallization, ultrasonic vibration, solid state, grain size, alloy

ABSTRACT: An attempt has been made to explain the ultrasonic effect on the structure of metals and alloys by complex experimental investigations comprising the phenomena occurring during metal crystallization and in the solid state. Examination of 600 samples in 102 experiments made possible a new model of the crystallization process caused by the ultrasonic effect and new phenomena appearing in the structure of samples subjected to the ultrasonic effect. A new method

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was proposed for detecting the distribution of vibrations appearing in the sample. The method permitted detecting of the first case of structural segregation of grains by size in the solid samples subjected to the ultrasonic effect. On the basis of new experiments with the ultrasonic effect on the solid particles suspended in liquid metal, a new hypothesis has been established; it is called the hypothesis of the triple mechanism of the ultrasonic effect upon the crystallization of metals and alloys. Possibilities were ascertained for obtaining two new Al—SiO_2 and Al—Pb alloys by the ultrasonic effect, which cannot be produced by the traditional methods. The study was carried out under the guidance of Professor Dr. K. Wesolowskiy. Orig. art. has: 18 figures. [Based on author' s abstract] [NT]

SUB CODE: 11/ SUBM DATE: 19Feb65/ ORIG REF: 029/ SOV REF: 015/
OTH REF: 037/

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15.4100

77549
SOV/65-60-2-9/15

AUTHORS: Danilov, I. N., Murzabulatov, Kh. A.

TITLE: The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, Nr 2, pp 44-46 (USSR)

ABSTRACT: The effect of gas medium on the thermal stability of jet fuels used for supersonic flights was studied on special apparatus, shown in Fig. 1. The thermal stability of the fuel was determined by the duration 600-minutes maximum of the experiment and by the pressure drop (340-mm maximum) on filter. The latter was made of nickel screen with 19,600 openings per 1 cm^2. The results of the experiment are shown in Table A.

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The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

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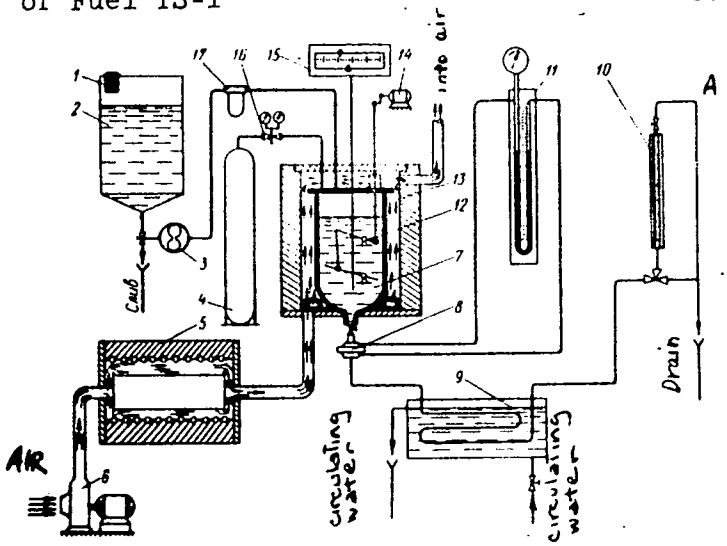

Card 2/8 Fig. 1. See Card 3/8 for Caption.

The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

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See Card 2/8 for Fig. 1.

Fig. 1. Schematic diagram of the apparatus used for determination of the thermal stability of fuels of type TS-1. (1) Filter for crude filtering; (2) fuel tank; (3) pump; (4) gas cylinder; (5) heating furnace; (6) ventilator; (7) heat exchanger; (8) experimental filter; (9) cooler; (10) rotameter; (11) differential manometer DT-50; (12) stirrer; (13) thermocouple; (14) electric motor; (15) millivolt meter MRShchPr-54; (16) pressure reduction valve; (17) preliminary filter.

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The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

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Key to Table A: (A) Medium in contact with fuel; (B) temperature of fuel, ° C; (C) Duration of experiment, minutes; (D) Pressure drop on filter, mm of mercury column; (1) Air; (2) Nitrogen (with 3.5% O_2); (3) Air; (4) Nitrogen (with 3.5% O_2); (5) Air; (6) Nitrogen (with 4.2% O_2); (7) Fuel vapors.

(A)	(B)	(C)	(D)
1. . . .	100	600	246
2. . . .	100	600	27
3. . . .	150	275	340
4. . . .	150	600	74
5. . . .	200	95	340
6. . . .	200	600	121
7. . . .	200	600	38

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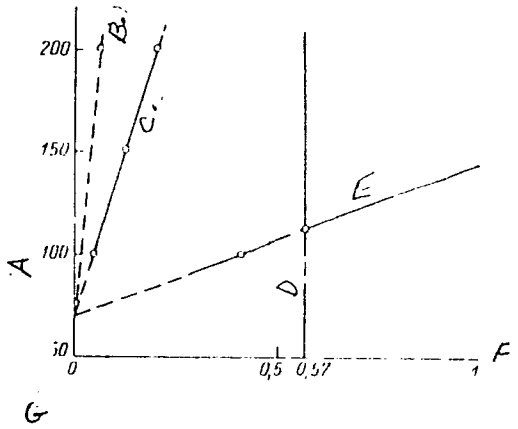
Tne Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

Figure 2 shows the relation between the thermal stability of fuel and the temperature of the fuel.



Card 5/8 See Card 6/8 for caption.

The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1 77-?? SOV/[illegible]/15

See Card 5/[illegible] for Figure 2.

Fig. 2. Dependence of the index of thermal stability on temperature. Key to Fig. 2: (A) Temperature; (B) TS-1 (fuel vapors); (C) TS-1 (nitrogen); (D) the limit of the thermal stability; (E) TS-1 (air); (F) the ratio of the pressure drop to duration of the experiment, $K = \frac{\Delta P}{T_{exper.}}$

The relation between thermal stability of the fuel and duration ofthe experiment is shown in Fig. 3. The considerable increase of the thermal stability of fuel TS-1 under a nitrogen cushion and under its own vapors indicates that formation of insoluble gum and coke deposits is the result of oxidation processes. There are 3 figures; 1 table; and 3 references, 1 Soviet, 2 U.S. The 2 U.S. references are: Perault, Americal Aviation, 1[illegible], Nr 1[illegible]. 4[illegible], 19[illegible]4;

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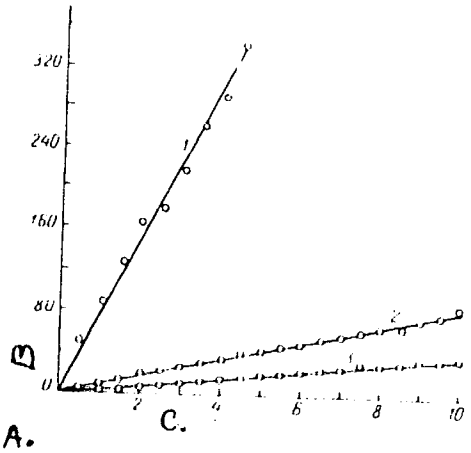
The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

SAE. J., 63, Nr 12, 12, 1[illegible].

ASSOCIATION: Bashkir Scientific Research Institute of Petroleum Industry (BashNII NP)



Card 7/8 See Card 8/8 For Caption.

The Effect of Gas Cushion on the Thermal Stability of Fuel TS-1

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See Card 7/8 for Fig. 3.

Fig. 3. Dependence of the thermal stability of fuel TS-1 on duration of the experiment. (1) Under air cushion at 150°; (2) under nitrogen cushion (with 5% of oxygen) at 150°; (3) under pressure of fuel vapors at 200°. Key to Fig. 3: (B) Pressure drop, mm of mercury column; (C) Time, hours.

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41757

S/744/62/000/005/003/003
I060/I260

11.5132

AUTHORS: Danilov, I.N. and Murzabulatov, Kh.A.

TITLE: Factors influencing thermal stability of fuels for aircraft jet engines

SOURCE: Ufa. Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti. Trudy. no. 5. 1962. Sernistyye nefti i produkty ikh pererabotki. 238-250

TEXT: The existing fuels for aircraft jet engines do not possess sufficient thermal stability. At temperatures of over 100°C they form insoluble deposits on various parts of the engine, lowering its efficiency. The methods of estimation of thermal stability of fuels are based on heating fuels up to the required temperature, passing them through the filter and measuring the drop of pressure on the filter caused by its clogging by insoluble deposits formed when the fuel is heated. The thermal stability of fuels depends on the method of its manufacture and on exploitation conditions. The author states that thermal stability is only slightly affected by the heating rate, whilst it decreases considerably with the increase of temperature. In the opinion of certain authors, it reaches the

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lowest value at the temperature of 150°C, then increases with higher temperatures. The values obtained do not depend on the conditions of experimentation and are only a function of the nature and quality of fuels. The author concludes that: 1. Thermal stability of fuel TC-1 (TS-1) in contact with air is satisfactory up to 100-110°C. 2. A nitrogen cushion or a cushion formed by fuel vapours in the area over the fuel, increase thermal stability of fuel. 3. Variation of velocity of heating, prolonged heating, cooling of fuel and its reheating up to the previous temperature do not influence the thermal stability of fuels. 4. When fuel is in contact with the air, its thermal stability is not influenced by the temperature of preliminary heating, provided it is not higher than the maximum heating temperature. 5. When fuel is in contact with nitrogen its thermal stability is influenced not only by the maximum temperature of heating but also by that of preliminary heating. The more the preliminary heating temperature approximates the maximum heating temperature, the higher the thermal stability. There are 8 figures and 6 tables.